AMENDMENTS TO THE CLAIMS

Please amend Claims 7, 11, 12, 16, 25, 32, and 45 as follows. Claims 8-10, 13-15, 17-24, 26-31, 33-38, and 46-54 remain as previously pending.

1.-6.   (Canceled)

7.   (Currently Amended)   A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers, each server computer having a computing device and a housing and being in communication with the remote computer and any other server computers, wherein at least one of the server computers includes a plurality of canisters, each of the canisters having a plurality of card slots;

wherein the at least one server computer further comprises a plurality of canister controllers, wherein the canister controllers are configured to examine canister fan speeds associated with canister fans and to control power to the canisters;

wherein the at least one server computer further comprises a plurality of temperature detectors; and

wherein the system is ~~further~~ configured to monitor temperatures indicated by the temperature detectors and to compare the indicated temperatures to a desired operating temperature range;

~~and, when the indicated temperature exceeds an upper limit of the range, if the canister fan speed of least one canister fan is below a threshold,~~

wherein the canister controller is further configured to automatically increase the canister fan speed of the at least one canister fan without user input when the indicated temperature exceeds an upper limit of the range, if the canister fan speed of least one canister fan is below a threshold; ~~and~~

-2-

wherein the canister controller is further configured to automatically power down the at least one server computer when the indicated temperature exceeds a warning threshold;

wherein the system is further configured to automatically indicate that the canister fan has a fault if the canister fan speed is zero;

wherein the system is further configured to automatically set the fan speed to high if the canister fan speed is below a fan speed threshold and above zero; and

wherein the system is further configured to automatically set the fan speed to low if the canister fan speed is above a fan speed threshold.

8.   (Previously Presented) The system of Claim 7, wherein at least one of the canisters is removable from the at least one server computer.

9.   (Original)   The system of Claim 7, additionally comprising a microcontroller which is configured to log conditions about the canister to a recording system.

10.   (Original)   The system of Claim 9, wherein the microcontroller is configured to log messages to non-volatile random access memory.

11.   (Currently Amended)   A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers in communication with the remote computer and any other server computers;

at least one fan speed detector configured to determine fan speed of at least one fan associated with at least one of the server computers;

at least one sensor, located within at least one of the server computers, configured to sense environmental conditions within the at least one server computer; and

-3-

an actuator configured to modify an environmental condition of the at least one server computer without user input, the modification based at least in part on the environmental conditions sensed by within the at least one server computer-;

wherein the system compares the fan speed indicated by the at least one fan speed detector to a fan speed threshold, automatically indicates that the fan has a fault when the fan speed is zero, automatically induces the actuator to operate at a higher output level when the fan speed is below a fan speed threshold and above zero, and automatically induces the actuator to operate at a lower output level when the fan speed is above a fan speed threshold; and

wherein the system compares the environmental conditions indicated by the at least one sensor to a an environmental threshold, and determines whether the actuator is capable of modification to a the higher output level, and automatically induces the actuator to operate at the higher output level when the threshold is exceeded and the higher output level is available, and to automatically power powers down the at least one server computer when the environmental conditions exceed a warning threshold.

12.   (Currently Amended)   A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers in communication with the remote computer and any other server computers, the server computer comprising a plurality of networked microprocessors;

at least one sensor, located within at least one of the server computers, configured to sense conditions within the at least one server computer, the at least one sensor communicating with the plurality of networked microprocessors, the conditions comprising a first condition and a second condition; and

one or more variable control components in communication with the plurality of networked microprocessors and with the remote computer-;

-4-

wherein at least one microprocessor of the plurality of networked microprocessors is configured to modify the operation of the variable <u>control</u> components based at least in part on a comparison of the <u>first</u> sensed condition to a <u>first</u> desired range of operation<u> and the second sensed condition to a second desired range of operation</u>; ~~and~~

wherein the modification is performed without user input when the sensed condition falls outside the desired range of operation<u>;</u> ~~and~~

wherein the modification comprises automatically powering down the ~~system~~ <u>at least one server computer</u> when the <u>first</u> sensed condition exceeds a warning threshold<u>;</u>

<u>wherein the modification further comprises automatically setting the variable control component to high when the second sensed condition falls within the second desired range of operation; and</u>

<u>wherein the modification further comprises automatically setting the variable control component to low when the sensed second condition falls outside the second desired range of operation</u>.

13.   (Original)   The system of Claim 12, wherein sensing the conditions comprises checking for a microcontroller bus time-out.

14.   (Previously Presented)   The system of Claim 12, wherein the system is configured to maintain a system log in a non-volatile random access memory.

15.   (Original)   The system of Claim 12, wherein sensing the conditions comprises monitoring the speed of a canister fan.

16.   (Currently Amended)   A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers in communication with the remote computer and any other server computers, at least one of the server computers having a computing device, at least one cooling fan, and a housing;

at least one <u>temperature</u> sensor, located within the at least one server computer, configured to sense temperature conditions within the at least one server computer;

<u>at least one fan speed sensor configured to sense a fan speed of the at least one cooling fan;</u> and

at least one microcontroller, located within the at least one server computer<u>-;</u>

wherein the microcontroller is configured to process requests for temperature conditions from the at least one server computer, responsively provide sensed temperature conditions to the computer, and, based at least in part on the sensed temperature conditions, increase the speed of the at least one cooling fan without user input and to automatically power down the at least one server computer when the sensed temperature conditions exceed a warning threshold<u>; and</u>

<u>wherein the microcontroller is configured to process requests for fan speeds from the at least one server computer, responsively provide sensed fan speeds to the computer, and based at least in part on the sensed fan speed, increase the speed of the at least one cooling fan without user input when the fan speed is below a fan speed threshold and decrease the speed of the at least one cooling fan without user input when the fan speed is above the fan speed threshold.</u>

17.   (Previously Presented) The system of Claim 16, wherein the at least one server computer includes a plurality of canisters and the microcontroller is configured to control power to the canisters.

18.   (Previously Presented)   The system of Claim 17, wherein the microcontroller is configured to control power to an individual slot of the canisters.

19.   (Original)   The system of Claim 16, wherein the microcontroller is configured to log conditions to a recording system.

20.   (Original)   The system of Claim 16, wherein the microcontroller is configured to log messages to non-volatile random access memory.

21.   (Previously Presented)   The system of Claim 16, wherein the microcontroller is configured to control the system power to the at least one server computer.

22.   (Original)   The system of Claim 16, wherein the microcontroller is connected to an I2C bus.

23.   (Original) The system of Claim 16, wherein one of the microcontrollers in the microcontroller network is connected to a canister.

24.   (Original)   The system of Claim 16, further comprising an actuator connected to the microcontroller, wherein the actuator is configured to modify an environmental condition of the computer.

25.   (Currently Amended)   A microcontroller network for diagnosing and managing the conditions of a computer, the microcontroller network comprising:

> one or more cooling fans arranged within the computer;

> one or more temperature detectors;

> at least one microcontroller, located within the computer, wherein the microcontroller is in communication with the one or more cooling fans and temperature detectors and is configured to self-manage temperature conditions within the computer;

> wherein the microcontroller is further configured to indicate that the cooling fan has a fault without user input if the fan speed of the cooling fan is zero, to set the fan speed of the cooling fan to high without user input if the fan speed is below a fan speed threshold and above zero, and to set the fan speed of the cooling fan to low without user input if the fan speed is above the fan speed threshold; and

wherein the microcontroller is further configured to increase the fan speed of the cooling fans located within the computer without user input if a temperature warning is indicated and to automatically power down the computer when the sensed temperature conditions exceed a warning threshold; and

a remote interface microcontroller and wherein the microcontroller network is configured such that the remote interface microcontroller continues to receive power so as to maintain communication with a remote computer even if the at least one computer is otherwise powered down.

26. (Original) The microcontroller of Claim 25, wherein the microcontroller is configured to check for a microcontroller bus time-out.

27. (Original) The microcontroller of Claim 25, wherein the microcontroller is configured to check for a manual system board reset.

28. (Original) The microcontroller of Claim 25, wherein the microcontroller is configured to check for a software reset command.

29. (Original) The microcontroller of Claim 25, wherein the microcontroller is configured to check for system faults.

30. (Original) The microcontroller of Claim 25, wherein the microcontroller is configured to maintain a system log in a non-volatile random access memory.

31. (Original) The microcontroller of Claim 25, wherein a selected one of the at least one microcontroller is configured to monitor the speed of a canister fan.

32. (Currently Amended) A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers in communication with the remote computer and any other server computers, at least one of the server computers having a plurality of computer-related components, wherein the components have associated environmental and systemic conditions;

at least one sensor configured to sense the environmental and systemic conditions, wherein the sensor is located within the at least one server computer;

at least one environmental condition control component located within the at least one server computer; and

at least one microcontroller connected to the sensor, the environmental condition control component and the at least one server computer,

wherein the microcontroller is configured to modify operation of the environmental condition control component without user input if the sensed environmental conditions of the at least one server computer indicate a warning and to automatically power down the at least one server computer when the sensed environmental conditions exceed the ability of the environmental condition control component to maintain the sensed environmental conditions within a warning range of operation;

wherein the microcontroller is further configured to indicate a cooling fan fault without user input if the sensed systemic conditions of the at least one server computer indicate that the environmental condition control component is non-operational;

wherein the microcontroller is further configured to set the operation of the environmental condition control component to high without user input if the sensed systemic conditions of the at least one server computer indicate the sensed systemic condition is within a desired operating range;

wherein the microcontroller is further configured to set the operation of the environmental condition control component to low without user input if the sensed systemic conditions of the at least one server computer indicate the sensed systemic condition is outside the desired operating range.

33.   (Previously Presented) The system of Claim 32, wherein the microcontroller is located within the at least one server computer.

34.   (Previously Presented) The system of Claim 32, wherein the microcontroller is configured to process requests for environmental or systemic

conditions from the at least one server computer and is configured to responsively provide the environmental or systemic conditions to the at least one server computer.

35.   (Original) The system of Claim 32, wherein the computer-related components comprise at least one component selected from the group consisting of: a system board, a central processing unit (CPU), a CPU fan, a backplane board, a backplane fan, a chassis, a chassis fan, a canister, a canister fan, a PCI card, and a PCI card fan.

36.   (Original) The system of Claim 32, wherein the sensor is configured to detect the temperature levels of selected ones of the computer-related components.

37.   (Original) The system of Claim 32, wherein the sensor is configured to detect the speed of a fan intended to cool down selected ones of the computer-related components.

38.   (Original) The system of Claim 32, wherein the sensor is configured to detect the voltage level applied to selected ones of the computer-related components.

39.-44. (Cancelled)

45.   (Currently Amended) A computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system;

one or more server computers in communication with the remote computer and any other server computers, at least one of the server computers having a computing device and a housing;

at least one temperature sensor, located within at least one of the server computers, configured to sense temperature conditions within the at least one server computer;

at least one cooling group arranged within the housing; and

at least one microcontroller, located within the at least one server computer, connected to the temperature sensor and the at least one server computer‚ :

wherein the microcontroller is configured to process requests for temperature conditions from the at least one server computer, responsively provide sensed conditions to the at least one server computer, and self-manage conditions of the at least one server computer by modifying the operations of the cooling group without user input, wherein the modification is based at least in part on the sensed condition and wherein the microcontroller is configured to induce power down of the at least one server computer when the temperature conditions exceed a warning threshold; and

wherein the microcontroller is configured to process requests for cooling group conditions from the at least one server computer, responsively provide cooling group conditions to the at least one server computer, and self-manage cooling group conditions without user input, wherein the microcontroller is configured to increase the speed of the at least one cooling group without user input when the cooling group conditions are within a desired cooling group operating range and to decrease the speed of the at least one cooling group without user input when the cooling group conditions are above the desired cooling group operating range.

46.   (Previously Presented) The system of Claim 45, wherein the at least one server computer includes a plurality of canisters and the microcontroller is configured to control power to the canisters.

47.   (Previously Presented) The system of Claim 45, wherein the microcontroller is configured to control power to a slot.

48.   (Previously Presented) The system of Claim 45, wherein the microcontroller is configured to log conditions to a recording system.

49.   (Previously Presented) The system of Claim 45, wherein the microcontroller is configured to log messages to non-volatile random access memory.

50.   (Previously Presented)   The system of Claim 45, wherein the microcontroller is configured to control the system power to the at least one server computer.

51.   (Previously Presented)   The system of Claim 7, wherein the remote computer is configured to request status information from the one or more server computers.

52.   (Previously Presented)   The system of Claim 51, wherein the system is configured such that the remote computer obtains system status information by retrieving a management information block (MIB) object from the one or more server computers.

53.   (Previously Presented)   The system of Claim 7, wherein the at least one server computer comprises a remote interface controller and wherein the system is configured such that the remote interface controller continues to receive power so as to maintain communication with the remote computer even if the at least one server computer is otherwise powered down.

54.   (Previously Presented)   The microcontroller of Claim 30, wherein the remote interface microcontroller is further configured to communicate data stored in the system log in non-volatile random access memory to the remote computer.